REMARKS

Status of Claims:

Claims 1-12 remain for examination.

Drawing Change:

Figure 3B has been amended to replace the column and row headings designating "R54" and "R55" with the headings – R61—and –R62—respectively to conform Fig. 3B with Fig. 1 and the written description. A substitute drawing sheet is attached.

Claim Objections:

Claims 1, 2, 5, 6, 9 and 10 stand objected to for the informalities noted in paragraph 7-9 of the outstanding office action. By way of the instant amendment, the basis for these claim objections have been removed by claim amendment, and it is submitted that all of applicant's claims are in full compliance with PTO rules and regulations.

Rejection under Sec. 112, Par. 2.:

Claims 5 and 9 stand rejected under 35 U.S.C. Sec. 112 as being indefinite. These claims have been amended to remove the basis for the ground of rejection. It is submitted that all of applicant's claims fully comply with the provisions of 35 U.S.C. Sec. 112.

Prior Art Rejections:

Claims 1-12 stand rejected under 35 U.S.C. Sec. 103 as obvious over RFC 2328 in view of RFC 2676.

The examiner's rejections are respectfully traversed.

Applicant was, of course, well aware of the cited prior art and indeed discussed such prior art in the background section of the application as originally filed. Further, copies of these two references were supplied to the PTO by applicant in an earlier filed IDS.

As explained in the background section of the specification, the systems constructed according to the prior art (RFC 2328 and RFC 2676) have the drawback in that the router receiving a on-demand QoS route calculation request from a user has no knowledge of which areas can be traversed to reach a specified destination, and thus the QoS-SPT calculation must be performed for all of its neighboring areas. Further, the router, has no knowledge of which remote area border routers can be used as intermediate routers to reach a remote destination. Therefore, if the destination is in a remote area and can be reached via the backbone area, the QoS-SPT must be calculated for all possible routes of the backbone area from the source router to the remote area border routers, in addition to the QoS-SPT calculations for all possible routes of the local area of the source router. As a result, the prior art routing technique is wasteful of QoS-SPT calculations.

Applicant's invention obviates the disadvantages of the prior art by providing, as recited in claim 1 for example,

> A router for a hierarchical communication network which is divided into a plurality of areas in each of which a plurality of said router are interconnected by links, comprising:
>
> a first table having a plurality of entries respectively corresponding to reachable destinations, each of the entries including one of an intra-area indication and an inter-area indication and an area identifier identifying at least one traversable area, said intra-area indication being associated with only one area identifier;
>
> at least one second table corresponding to said at least one traversable area, each of said at least one second table holding quality-of-service (QoS) values of only the links of the corresponding at least one traversable area; and
>
> a processor, responsive to a request signal specifying a destination and a QoS value, for making reference to one of the entries of the first table and said at least one second table corresponding to the specified destination, selecting links of the area identified by the area identifier of the referenced entry which links satisfy the specified QoS value, and performing a calculation according to a shortest path finding algorithm on the selected links to find a shortest path to the specified destination if the intra-area indication is included in the referenced entry, or

> performing said shortest path calculation on the selected links
> to find a shortest path tree in the identified area and
> determining a route from the shortest path tree. (Emphasis
> added.)

The prior art references simply do not teach applicant's invention as recited. The underlined portions of the claim 1 emphasize the differences between applicant's recited invention and the prior art. For example, claim one has been amended to recite that in the first table, the intra-area indication is associated with only one area identifier. This recitation is in sharp contrast to table 13 (page 114) of RFC 2328 cited by the examiner. Indeed, table 13 is a routing table for the router RT4 in the topology shown in Fig. 6 (page 36) and may be seen to indicate that both areas one and zero are listed with "intra-area" identifiers. In accordance with applicant's teaching, the use of the area identifier (associated with only one intra-area indication) is important to reduce calculation time and effort since the path finding destination is limited only to the local area identified by the area identifier (in the case of intra-area destinations).

Further, applicant's use of the at least one second table where "each of said at least one second table holding quality-of-service (QoS) values of only the links of the corresponding at least one traversable area" is not shown at Sec. B (page 30) of RFC 2676 as stated by the examiner, as this section only generally teaches the use of the Dijkstra algorithm where of course standard routing tables are employed. Applicant's second tables store quality-of-service (QoS) values of only the links of their corresponding areas. Thus, in reference to applicant's Fig. 3A, for example, the QoS values correspond only to links within area 4, and this table is used under the assumption that area 4 is a traversable area needed to get to the desired destination.

In view of the differences pointed out above, it is submitted that the PTO has not made out a *prima facie* case of obviousness under the provisions of 35 U.S.C. Sec. 103 since the combined teachings of the references do not make obvious applicant's recited claim limitations. Thus, claim 1 is deemed patentable over the prior art.

Applicant's independent claims 2, 5, 6, 9, and 10 contain similar limitations as those discussed above in connection with claim 1 and are likewise deemed patentable over the prior

art. Further, applicant's dependent claims are deemed patentable at least for the reasons indicated above with respect to the independent claims from which they depend.

Conclusions:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date ___/- 3- 05___   By _____

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